

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
26 February 2004 (26.02.2004)

PCT

(10) International Publication Number
WO 2004/016360 A1

- (51) International Patent Classification⁷: **B05D 5/00**
- (21) International Application Number:
PCT/US2003/025248
- (22) International Filing Date: 13 August 2003 (13.08.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/403,530 14 August 2002 (14.08.2002) US
60/462,356 11 April 2003 (11.04.2003) US
- (71) Applicant (*for all designated States except US*): **RENSSELAER POLYTECHNIC INSTITUTE** [US/US]; 110 8th Street, Troy, NY 12180-3590 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **BELFORT, Georges** [CA/CA]; 162 Font Grove Road, Slingerlands, NY 12159 (US). **HAN, Mina** [KR/KR]; Yonsei University, Shinchon 134, Seoul 120-479 (KR). **KANE, Ravindra, S.** [US/US]; 400 Brunswick Drive 10-9, Troy, NY 12180 (US).
- (74) Agents: **GOLDMAN, Michael, L.** et al.; Nixon Peabody LLP, Clinton Square, P.O. Box 31051, Rochester, NY 14603-1051 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: IMPRINTING A SUBSTRATE FOR SEPARATION OF A TARGET MOLECULE FROM A FLUID MEDIUM

(57) Abstract: The present invention is directed to a method of producing a substrate suitable for separation of a target molecule from a fluid medium. This method includes providing an emulsion comprising a water phase in an oil phase, where the oil phase contains a polymerizable monomer and the water phase contains the target molecule. The substrate, having pores extending from one side of the substrate to another side of the substrate, is coated with the emulsion, and the monomer in the emulsion coated substrate is then polymerized. The water and target molecule are removed from the polymerized, emulsion coated substrate. As a result, the substrate is imprinted with the target molecule and, therefore, is suitable for separation of the target molecule from a fluid medium. The resulting article and its use are also disclosed.



WO 2004/016360 A1